

Appln. No. 09/823,363
Amndt. dated October 5, 2005
Reply to Office Action dated July 5, 2005

IN THE CLAIMS:

Please add new claims 20-23 as follows. The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Cancelled).

Claim 2 (Previously Presented). The method according to claim 17, wherein the video signal is video data encoded according to the MPEG algorithm.

Claim 3 (Previously Presented). The method according to claim 17, wherein the video signal is video data encoded according to the MPEG2 algorithm.

Claim 4 (Previously Presented). The method according to claim 17, wherein the predetermined coefficient represents the highest horizontal frequency in the MB regardless of vertical frequency.

Claim 5 (Previously Presented). The method according to

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claim 17, wherein the predetermined coefficient represents the highest vertical frequency in the MB regardless of horizontal frequency.

Claim 6 (Previously Presented). The method according to claim 17, wherein the predetermined coefficient represents the highest horizontal frequency and the highest vertical frequency in the MB.

Claim 7 (Previously Presented). The method according to claim 17, wherein:

the sub-array of coefficients on which IDCT-coding is performed is comprised of one of two sub-arrays:

5. a first sub-array consisting of one quarter of the DCT coefficients in the DCT coefficient array, the coefficients in said one quarter having horizontal frequencies and lower vertical frequencies than the rest of the coefficients in the DCT coefficient array; and

10 a second sub-array consisting of one half of the DCT coefficients in the DCT coefficient array, the coefficients having lower vertical frequencies than the rest of the coefficients in the DCT coefficient array;

IDCT coding is performed on the first sub-array if the value

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- 15 of the predetermined coefficient is below a predetermined threshold; and

IDCT coding performed on the second sub-array if the value of the predetermined coefficient is equal to or greater than the predetermined threshold.

Claim 8 (Cancelled).

Claim 9 (Previously Presented). The system according to claim 18, wherein the video signal is video data encoded according to the MPEG algorithm.

Claim 10 (Previously Presented). The system according to claim 18, wherein the video signal is video data encoded according to the MPEG2 algorithm.

Claim 11 (Previously Presented). The system according to claim 18, wherein the predetermined coefficient represents the highest horizontal frequency in the MB regardless of vertical frequency.

Claim 12 (Previously Presented). The system according to claim 18, wherein the predetermined coefficient represents the

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highest vertical frequency in the MB regardless of horizontal frequency.

Claim 13 (Previously Presented). The system according to claim 18, wherein the predetermined coefficient represents the highest horizontal frequency and the highest vertical frequency in the MB.

Claim 14 (Previously Presented). The system according to claim 18, wherein:

the sub-array of coefficients on which IDCT-coding is performed is composed of one of two sub-arrays:

5 a first sub-array consisting of one quarter of the DCT coefficients in the DCT coefficient array, the coefficients in said one quarter having lower horizontal frequencies and lower vertical frequencies than the rest of the coefficients in the DCT coefficient array; and

10 a second sub-array consisting of one half of the DCT coefficients in the DCT coefficient array, the coefficients in said one half having lower vertical frequencies than the rest of coefficients in the DCT coefficient array;

the processing means performs IDCT-coding on the first
15 sub-array if the value of the predetermined coefficient is below

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a predetermined threshold; and

the processing means performs IDCT-coding on the second sub-array if the value of the predetermined coefficient is equal to or greater than the predetermined threshold.

Claim 15 (Previously Presented). The method according to claim 4, wherein the predetermined coefficient represents the lowest vertical frequency in the MB.

Claim 16 (Previously Presented). The system according to claim 11, wherein the predetermined coefficient represents the lowest vertical frequency in the MB.

Claim 17 (Previously Presented). A method of decoding a video signal, the method comprising:

receiving an array of Discrete Coefficient Transform (DCT) coefficients, said DCT coefficient array having been obtained by
5 performing the DCT algorithm on a macroblock (MB), said macroblock being an array of pixels in a video frame, wherein said DCT coefficient array corresponds to said MB;

determining at least one of the horizontal complexity and the vertical complexity of said MB by determining the value of a
10 predetermined one of the coefficients, wherein said

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predetermined coefficient represents the highest of at least one of horizontal frequency and vertical frequency; and

- performing inverse DCT (IDCT) coding on a sub-array of coefficients within the DCT coefficient array in order to
- 15 reconstruct said macroblock, wherein the size and position of said sub-array depends on the determined value of the predetermined one of the coefficients having the highest of at least one of horizontal frequency and vertical frequency.

Claim 18 (Previously Presented). A system for decoding a video signal, the system comprising:

- a receiver for receiving an array of Discrete Coefficient Transform (DCT) coefficients, said DCT coefficient array having
- 5 been obtained by performing the DCT algorithm on a macroblock (MB), said macroblock being an array of pixels in a video frame, wherein said DCT coefficient array corresponds to said MB; and
- a processing means for:

- determining at least one of the horizontal complexity
- 10 and the vertical complexity of said MB by determining the value of a predetermined one of the coefficients, wherein said predetermined coefficient represents the highest of at least one of horizontal frequency and vertical frequency; and

performing inverse DCT (IDCT) coding on a sub-array of

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- 15 coefficients within the DCT coefficient array in order to reconstruct said macroblock, wherein the size and position of said sub-array depends on the determined value of the predetermined one of the coefficients having the highest of at least one of horizontal frequency or vertical frequency.

Claim 19 (Previously Presented). The system according to claim 18, wherein the processing means is implemented in at least one of hardware, firmware, and software.

Claim 20 (New). The method according to claim 17 wherein the entire array of DCT coefficients is not scanned prior to determining the value of the predetermined one of the coefficients.

Claim 21 (New). The system according to claim 18 wherein the entire array of DCT coefficients is not scanned prior to determining the value of the predetermined one of the coefficients.

Claim 22 (New). The method according to claim 17 wherein the location of the predetermined one of the coefficients is predetermined.

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Claim 23 (New). The system according to claim 18 wherein the location of the predetermined one of the coefficients is predetermined.